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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/687,886	10/20/2003	Che-Li Lin	LEE0021-US	2058

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EXAMINER	
ANDREWS, LEON T	
ART UNIT	PAPER NUMBER
2616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/687,886	LIN, CHE-LI	
	Examiner	Art Unit	
	LEON ANDREWS	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 January 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-8,11 and 14-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4-8,11 and 14-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 28, 2008 has been entered.

Examiner's Remarks

Claim 11 has been cancelled according to the remarks on page 8 and currently amended on page 5. However, there is no indication of the amendment. This constitutes an improper amendment according to rule 121.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1, 4-8 and 14-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Sriram (Patent No.: US 6,665,277 B1)

Regarding Claim 1, Sriram disclosed a method (Fig. 5 showing a sequence of steps to be performed) for a mobile unit (mobile receiver, column 5, line 21) synchronizing with a base station (base station, column 4, line 66) in a WCDMA system (WCDMA communication system, column 1, line 13), said base station (base station, column 4, line 66) transmitting a signal (Fig. 2, Signal IN) to said mobile unit, said signal having a primary synchronization channel (Fig. 5, Primary Sync Channel), a secondary synchronization channel (Fig. 5,Secondary Sync Channel), and a common pilot channel (Fig. 5, Tertiary Sync Channel), the method comprising:

receiving the signal (Fig. 2, Signal IN);

sampling the signal (Fig. 2, Signal IN) in each period to generate a plurality of sample signals (Fig. 5, 508, 510, 512);

selecting either odd ones or even ones of the sample signal during a first slot period (Fig. 5, slot 1 at time slot 502) to be a first period signal (Fig. 5, primary synchronization code 508 at time slot 502);

obtaining a first slot timing (Fig. 5, timing slot 502) according to the first period signal and the primary synchronization channel;

selecting even ones (Fig. 5, SSC 2) of the sample signals (Fig. 5, 508, 510, 512) during a second slot period (Fig. 5, slot 2 at time slot 504) to be a second period signal (Fig. 5, 510) if odd ones (Fig. 5, SSC1) of the sample signals are selected during the first slot period (Fig. 5, slot 1 at time slot 502), selecting odd ones of the sample signals during the second slot period (Fig. 5, slot 2 at time slot 504) to be the second period signal (Fig. 5, 510) if even ones (Fig. 5, SSC 2) of the sample signals are selected during the first slot period (Fig. 5, slot 1 at time slot 502);

obtaining a second slot timing (Fig. 5, timing slot 504) and a slot synchronization signal (Fig.5, SSC2) according to the second period signal and the primary synchronization channel;

selecting even ones (Fig. 5, TSC2) of the sample signals (Fig. 5, 508, 510, 512) during a third slot period (Fig. 5, slot 3 at third time slot) to be a third period signal (Fig. 5, 512 at the third time slot) if odd ones (Fig. 5, TSC1) of the sample signals are selected during the second slot period (Fig. 5, slot 2 at time slot 504), selecting odd ones (Fig. 5, TSC1) of the sample signals during the third slot period to be the third period signal (Fig. 5, 512 at the third time slot) if even ones of the sample signals are selected during the second slot period (Fig. 5, slot 2 at time slot 504);

obtaining a frame synchronization signal (Fig. 7, frame sync) according to the first slot timing (Fig. 5, timing slot 502), the second slot timing (Fig. 5, timing slot 504), the slot synchronization signal (Fig.5, SSC1), the secondary synchronization channel (Fig. 5,Secondary Sync Channel), and the third period signal (Fig. 5, 512 at the third time slot); and

obtaining a scrambling-code identification signal (comma free code words uniquely identify groups of sixteen scrambling codes transmitted by base station, column 4, lines 64-66: Fig. 8) according to the first slot timing, the second slot timing, the frame synchronization signal, and common pilot channel (Fig. 5, Tertiary Sync Channel) and the third period signal (Fig. 5, 512 at the third time slot).

Regarding Claims 4 Sriram disclosed an apparatus for mobile unit (mobile receiver, column 5, line 21) synchronizing with a base station (base station, column 4, line 66) in a WCDMA system (WCDMA communication system, column 1, line 13), the base station transmitting a signal (Fig. 2, Signal IN) to the mobile unit, the signal having a primary synchronization channel (Fig. 5, Primary Sync Channel), a secondary synchronization channel (Fig. 5,Secondary Sync Channel), and a common pilot channel (Fig. 5, Tertiary Sync Channel), the apparatus comprising:

a receiving unit (mobile receiver, column 5, line 21) for receiving the signal;

a sampling unit (Fig. 2, 221) for sampling the signal to generate a plurality of sample signals (Fig. 5, 508, 510, 512);

a selecting unit (base station transmits a special signal, column 2, lines 27-28) for selecting either odd ones or even ones of the sample signals during a first slot period (Fig. 5,

slot 1 at time slot 502) to be a first period signal (Fig. 5, primary synchronization code 508 at time slot 502), selecting even ones (Fig. 5, SSC 2) of the sample signals (Fig. 5, 508, 510, 512) during a second slot period (Fig. 5, slot 2 at time slot 504) to be a second period signal (Fig. 5, 510) if odd ones (Fig. 5, SSC1) of the sample signals are selected during the first slot period (Fig. 5, slot 1 at time slot 502), selecting odd ones of the sample signals during the second slot period (Fig. 5, slot 2 at time slot 504) to be the second period signal (Fig. 5, 510) if even ones (Fig. 5, SSC 2) of the sample signals are selected during the first slot period (Fig. 5, slot 1 at time slot 502), selecting even ones (Fig. 5, TSC2) of the sample signals (Fig. 5, 508, 510, 512) during a third slot period (Fig. 5, slot 3 at third time slot) to be a third period signal (Fig. 5, 512 at the third time slot) if odd ones (Fig. 5, TSC1) of the sample signals are selected during the second slot period (Fig. 5, slot 2 at time slot 504), selecting odd ones (Fig. 5, TSC1) of the sample signals during the third slot period to be the third period signal (Fig. 5, 512 at the third time slot) if even ones of the sample signals are selected during the second slot period (Fig. 5, slot 2 at time slot 504), and selecting even ones (Fig. 5, IN2 received at Fig. 5) of the sample signals (Fig. 5, 508, 510, 512; Fig. 2, IN) during a fourth slot period (Fig. 5, slot 4) to be a fourth period signal (Fig. 2, IN) if odd ones (Fig. 5, IN1 received at Fig. 5) of the sample signals are selected during the third slot period (Fig. 5, slot 3 at third time slot), selecting odd ones (Fig. 5, IN1 received at Fig. 5) of the sample signals during the fourth slot period to be the fourth period signal (Fig. 2, IN) if even ones of the sample signals are selected during the third slot period (Fig. 5, slot 3 at third time slot);

a first synchronization unit (Fig. 5, Primary Sync Channel) for obtaining a first slot synchronization signal (Fig. 5, primary synchronization code 508 at slot 1) according to the first

period signal and the primary synchronization channel, and obtaining a second slot synchronization signal (Fig.5, SSC2) according to the second period signal and the primary synchronization channel (Fig. 5, Primary Sync Channel);

a second synchronization unit (Fig. 5, Secondary Sync Channel) for obtaining a first frame synchronization signal (Fig.5, first synchronization code FSC) according to a first slot synchronization signal (Fig. 5, SS1), the secondary synchronization channel, and the third period signal, and obtaining a second frame synchronization signal (Fig. 5, 510) according to a second slot synchronization signal (Fig.5, SSC2), the secondary synchronization channel, and the fourth period signal (Signal IN received at Fig. 5, timing slot 4); and

a third synchronization unit (Fig. 5, Tertiary Sync Channel) for obtaining a first scrambling-code identification signal (comma free code words uniquely identify groups of sixteen scrambling codes transmitted by base station, column 4, lines 64-66; Fig. 8) according to the first frame synchronization signal (Fig.5, first synchronization code FSC), the common pilot channel (Fig. 5, Tertiary Sync Channel), and the third period signal (Fig. 5, 512 at the third time slot).

Regarding Claim 5, Sriram disclosed the apparatus of claim 4, abandoning the first scrambling-code identification signal (comma free code words uniquely identify groups of sixteen scrambling codes transmitted by base station, column 4, lines 64-66; Fig. 8) if the mobile unit does not synchronize with the base station, and obtaining a second scrambling-code identification signal (comma free code words uniquely identify groups of sixteen scrambling codes transmitted by base station, column 4, lines64-66; Fig. 8) according to the second frame

synchronization signal, the common pilot channel (Fig. 5, Tertiary Sync Channel) and the fourth period signal (Signal IN received at Fig. 5, timing slot 4).

Regarding Claim 6, Sriram disclosed the apparatus of claim 4, the first synchronization unit (Fig. 5, Primary Sync Channel) further obtaining a first slot timing (Fig. 5, timing slot 502) according to the first period signal (Fig. 5, primary synchronization code 508 at time slot 502) and the primary synchronization channel (Fig. 5, Primary Sync Channel).

Regarding Claim 7, Sriram disclosed the apparatus of claim 6, the first synchronization unit further obtaining a second slot timing (Fig. 5, timing slot 504) according to the second period signal (Fig. 5, 510) and the primary synchronization channel (Fig. 5, Primary Sync Channel).

Regarding Claim 8, Sriram disclosed the apparatus of claim 7, wherein the second synchronization unit (Fig. 5, Secondary Sync Channel) obtains the second slot timing (Fig. 5, timing slot 504) by referring to the first slot timing (Fig. 5, timing slot 502) and the second slot timing (Fig. 5, timing slot 504).

Regarding Claim 14, Sriram disclosed a method (Fig. 5 showing a sequence of steps to be performed) for a mobile unit (mobile receiver, column 5, line 21) synchronizing with a base station (base station, column 4, line 66), the base station transmitting a signal (Fig. 2, Signal IN) to the mobile unit, the signal having a primary synchronization channel (Fig. 5, Primary Sync

Channel), a secondary synchronization channel (Fig. 5,Secondary Sync Channel), and a common pilot channel (Fig. 5, Tertiary Sync Channel), comprising:

receiving and sampling the signal (Fig. 2, Signal IN) in each slot period to generate a plurality of sample signals (Fig. 5, 508, 510, 512);

selecting either odd ones or even ones of the sample signals during a first slot period (Fig. 5, slot 1 at time slot 502) to be a first period signal (Fig. 5, primary synchronization code 508 at time slot 502);

obtaining a first slot timing (Fig. 5, timing slot 502) according to the first period signal and the primary synchronization channel;

selecting even ones (Fig. 5, SSC 2) of the sample signals (Fig. 5, 508, 510, 512) during a second slot period (Fig. 5, slot 2 at time slot 504) to be a second period signal (Fig. 5, 510) if odd ones (Fig. 5, SSC1) of the sample signals are selected during the first slot period (Fig. 5, slot 1 at time slot 502), selecting odd ones of the sample signals during the second slot (Fig. 5, slot 2 at time slot 504) period to be the second period signal (Fig. 5, 510) if even ones (Fig. 5, SSC 2) of the sample signals are selected during the first slot period (Fig. 5, slot 1 at time slot 502);

obtaining a second slot timing (Fig. 5, timing slot 504) and a slot synchronization signal (Fig.5, SSC2) according to the second period signal and the primary synchronization channel;

selecting even ones (Fig. 5, TSC2) of the sample signals (Fig. 5, 508, 510, 512) during a third slot period (Fig. 5, slot 3 at third time slot) to be a third period signal (Fig. 5, 512 at the third time slot) if odd ones (Fig. 5, TSC1) of the sample signals are selected during the second slot period (Fig. 5, slot 2 at time slot 504), selecting odd ones (Fig. 5, TSC1) of the sample

signals during the third slot period to be the third period signal (Fig. 5, 512 at the third time slot) if even ones of the sample signals are selected during the second slot period (Fig. 5, slot 2 at time slot 504);

achieving a frame synchronization (Fig. 7, frame sync) according to the secondary synchronization channel (Fig. 7, frame sync using SSC), wherein both the first slot timing (Fig. 5, timing slot 502) and the second slot timing (Fig. 5, timing slot 504) are regarded as a reference (Fig. 7, slot sync using FSC detecting cyclic shift of any of the N sequences) for a slot timing (Fig. 5, 0.625 milliseconds) in processing the frame synchronization; and

obtaining a scrambling-code identification signal (comma free code words uniquely identify groups of sixteen scrambling codes transmitted by base station, column 4, lines 64-66: Fig. 8) according to the first slot timing, the second slot timing, the frame synchronization, and the common pilot channel (Fig. 5, Tertiary Sync Channel) and the third period signal (Fig. 5, 512 at the third time slot).

Regarding Claim 15, Sriram disclosed a method (Fig. 5 showing a sequence of steps to be performed) for a mobile unit (mobile receiver, column 5, line 21) synchronizing with a base station (base station, column 4, line 66), the base station transmitting a signal (Fig. 2, Signal IN) to the mobile unit, the signal having a primary synchronization channel (Fig. 5, Primary Sync Channel), a secondary synchronization channel (Fig. 5,Secondary Sync Channel), and a common pilot channel (Fig. 5, Tertiary Sync Channel), comprising:

receiving and sampling the signal (Fig. 2, Signal IN) in each slot period to generate a plurality of sample signals (Fig. 5, 508, 510, 512);

selecting either odd ones or even ones of the sample signals during a first slot period (Fig. 5, slot 1 at time slot 502) to be a first period signal (Fig. 5, primary synchronization code 508 at time slot 502);

obtaining a first slot timing (Fig. 5, timing slot 502) according to the first period signal and the primary synchronization channel;

selecting even ones (Fig. 5, SSC 2) of the sample signals (Fig. 5, 508, 510, 512) during a second slot period (Fig. 5, slot 2 at time slot 504) to be a second period signal (Fig. 5, 510) if odd ones (Fig. 5, SSC1) of the sample signals are selected during the first slot period (Fig. 5, slot 1 at time slot 502), selecting odd ones of the sample signals during the second slot period (Fig. 5, slot 2 at time slot 504) to be the second period signal (Fig. 5, 510) if even ones (Fig. 5, SSC 2) of the sample signals are selected during the first slot period (Fig. 5, slot 1 at time slot 502);

obtaining a second slot timing (Fig. 5, timing slot 504) according to the second period signal and the primary synchronization channel;

achieving a frame synchronization (Fig. 7, frame sync) according to the secondary synchronization channel (Fig. 7, frame sync using SSC), wherein both the first slot timing (Fig. 5, timing slot 502) and the second slot timing (Fig. 5, timing slot 504) are regarded is selected as a slot timing (Fig. 5, 0.625 milliseconds) in processing the frame synchronization.

Regarding Claim 16, Sriram disclosed the method of claim 15, wherein selecting either the first slot timing (Fig. 5, timing slot 502) or the second slot timing (Fig. 5, timing slot 504) in processing the frame synchronization further comprises:

obtaining a first peak profile (Fig. 5, 502 for slot1, 504 for slot 2) of the first period signal (Fig. 5, 508);

obtaining a second peak profile (Fig. 5, 502 for slot1, 504 for slot 2) of the second period signal (Fig. 5, 510); and

comparing the first peak profile and the second peak profile (comparing timing slot 502 slots 1 of Fig. 5, 508, 510 with timing slot 504 slots 2 of Fig. 5, 508, 510).

Citation of Pertinent Prior Art

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ottosson et al. (Patent No.: US 6,480,558 B1) discloses synchronization and cell search methods and apparatus for wireless communications.

Moon et al. (Patent No.: US 6,741,578 B1) discloses apparatus and method for synchronizing channels in a WCDMA communication system.

Rudolf (Patent No.: US 6,539,032 B2) discloses methods for synchronizing between a base station and a mobile station in a cell-based mobile communications system.

Conclusion

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leon Andrews whose telephone number is (571) 270-1801. The examiner can normally be reached on Monday through Friday 7:30 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rao S. Seema can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Seema S. Rao/

Supervisory Patent Examiner,

Art Unit 2616

LA/la
March 27, 2008